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(54) **Cover for Cable Fitting Base**

Abdeckung für Kabelverbinderbasis

Protection pour base de fixation de câble

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Description

Field of the Invention

[0001] The present invention relates to a cover for a cable fitting base, and more particularly to a latch that releasably secures a cover on the cable fitting base.

Background of the Invention

[0002] Raceway and duct systems are used to route, protect and conceal data, voice, video and/or fiber-optic cabling. Overhead raceway systems allow custom installation and can be provided above network cabinet equipment, allowing ready access for reconfiguration, repair or installation of additional equipment. Such systems can be formed from various sections of raceway or duct, including straight sections, 90 degree corner fittings, 45 degree corner fittings, T fittings, four-way intersection (X) fittings, and the like, which are affixed together by way of a duct coupler.

[0003] Typical raceway systems consist of troughs or fittings made up of a base member and a cover. The cover may be a hinged cover or a snap-on cover. In operation, the snap-on cover must be removed to allow access to a cable receiving cavity within the base member. When a long raceway made up of several raceway sections is involved, it may be difficult and/or time consuming to remove all of the covers and to return them after the installation.

[0004] It is desirable to have a raceway or cable management system with base members and covers that are easily installed, secured and removed without the use of tools.

[0005] US 6,554,327 discloses a latch assembly for securing a cover to a container wherein the assembly comprises a base for mounting to the container cover adjacent to an edge thereof, a cover member secured to the base and a slider slidable between the base and cover member between a latched position wherein a portion of the slider interfits with the container and an unlatched position wherein the slider portion is disengaged from the container. A headed spring member interposed between the slider and the base interfits with holes or resetters in the sliders to signal when the slider has reached its latch and unlatched positions and to releasable retain the slider at those positons.

[0006] EP 1033800 discloses a wire way system having a pivotable cover.

[0007] US 3,331,916 discloses an improved lay-in wireway which permits relatively free lateral access thereto and which provides an oil, moisture and dust proof construction.

[0008] US 2005/0145410 discloses a locking structure for protector and wire harness.

[0009] US 6,476,327 discloses a split fibre cover and raceway fitting.

[0010] EP 1,162,709 discloses a wiring duct system hinge arrangement.

Summary of the Invention

[0011] A cable management system with a fitting base and a cover is disclosed. The fitting base includes a bottom and sidewalls with a top edge. The cover includes a top having a latch receiving area, a bottom and a sliding latch. The sliding latch is positioned on the latch receiving area. The sliding latch includes a first end with a finger tab, a main body and a second end with locking feet. The sliding latch releasably secures the cover to the fitting base.

[0012] An invention is set out in the claims.

Brief Description of the Drawings

[0013]

FIG. 1 is a perspective view of the cover of the present invention partially installed on a four-way cross fitting base;

FIG. 2 is a top perspective view of a single half cover illustrated in FIG. 1;

FIG. 3 is a bottom perspective view of the single half cover illustrated in FIG. 2;

FIG. 4 is a top perspective view of one of the sliding latches of the cover illustrated in FIG. 1 in an open position;

FIG. 5 is a bottom perspective view of the sliding latch illustrated in FIG. 4 in the open position;

FIG. 6 is a cross sectional view of the sliding latch illustrated in FIG. 4 in the open position;

FIG. 7 is a top perspective view of one of the sliding latches of the cover illustrated in FIG. 1 in a closed position;

FIG. 8 is a bottom perspective view of the sliding latch illustrated in FIG. 7 in the closed position;

FIG. 9 is a cross sectional view of the sliding latch illustrated in FIG. 7 in the closed position;

FIG. 10 is a top perspective view of one of the sliding latches of the cover in an open position and positioned on an alternative latch receiving area, according to an example useful for understanding the invention;

FIG. 11 is a bottom perspective view of the sliding latch illustrated in FIG. 10 in the open position;

FIG. 12 is a cross sectional view of the sliding latch illustrated in FIG. 10 in the open position;

FIG. 13 is a top perspective view of one of the sliding latches of the cover in a closed position and positioned on an alternative latch receiving area;

FIG. 14 is a bottom perspective view of the sliding latch illustrated in FIG. 13 in the closed position;

FIG. 15 is a cross sectional view of the sliding latch illustrated in FIG. 13 in the closed position;

FIG. 16 is a perspective view of an alternative cover of the present invention installed on a four-way cross

fitting base with narrow exits;

FIG. 17 is a perspective view of an alternative cover of the present invention installed on a tee fitting base with a narrow exit; and

FIG. 18 is a perspective view of an alternative cover of the present invention installed on a horizontal 45 degree fitting base.

Detailed Description

[0014] FIG. 1 illustrates a perspective view of the cover 20 of the present invention partially installed on a four-way cross fitting base 100. The fitting base 100 includes a bottom 102 and sidewalls 104 forming a channel or pathway 110. The sidewalls 104 of the fitting base include a top edge 106. As discussed below, the top edge 106 includes a lip 108 extending away from the sidewalls 104.

[0015] The cover 20 installed over the four-way cross fitting base 100 is formed from two identical cover halves 22. The split cover design facilitates the handling and installation of the cover 20 over the fitting base 100. FIG. 1 illustrates the left half of the cover fully installed and the right half of the cover positioned to be installed on the fitting base.

[0016] As illustrated in FIGS. 1 and 2, the cover halves 22 have a crowned profile to increase the strength and rigidity of each cover half 22.

[0017] FIGS. 2 and 3 illustrate one of the identical cover halves 22. FIG. 2 illustrates the top 24 of the cover half 22. Each cover half 22 includes three sliding latches 60 positioned at the outer ends 26 of the cover half 22. The outer ends 26 of the cover half 22 include a downwardly extending edge 28. The downwardly extending edges 28 are positioned adjacent to the sliding latches 60. Although the cover half 22 is illustrated with three sliding latches, it is contemplated that the number of sliding latches on the cover may vary depending on the dimensions of the cover and the fitting base.

[0018] FIG. 3 illustrates the bottom 30 or underside of the cover half 22. The cover half 22 includes a plurality of ribs 32 positioned along the underside to prevent the cover half 22 from sagging. The cover half 22 also includes ribs 34. Ribs 34 are positioned adjacent to each sliding latch 60 such that the ribs 34 are spaced from the outer ends 26 of the cover half 22 and the downwardly extending edge 28. The downwardly extending edge 28 of the cover half 22 and the ribs 34 define a channel 36 therebetween for receiving a portion of the fitting base 100. The downwardly extending edge 28, the ribs 34 and the channel 36 provide a keyed feature that ensures the proper placement of the cover half 22 over the fitting base 100.

[0019] FIGS. 4-9 illustrate one of the sliding latches 60 installed on the cover 20 of the present invention. The cover includes a plurality of latch receiving areas, such as recessed areas 40 that maintain the sliding latches 60. FIGS. 4-6 illustrate a top of the cover 20 and the sliding latch 60 positioned within the recessed area 40 in an extended open position.

[0020] The sliding latch 60 includes a first end 62, a main body 64 and a second end 66. The first end 62 of the sliding latch 60 includes an upwardly extending finger tab 68. The finger tab 68 allows the sliding latch 60 to be engaged and easily moved from an open position to a closed position. The second end 66 of the sliding latch 60 includes locking feet 72. As illustrated in FIGS. 5 and 6, each locking foot 72 includes a downwardly extending member 74, an inwardly extending member 76 and an outer rib 78 for strength. The inwardly extending members 76 of the locking feet 72 are spaced from and positioned under the main body 64 closer to the second end 66 of the sliding latch 60.

[0021] As illustrated in FIG. 6, the cover 20 also includes detents 42a, 42b formed in each recessed area 40 of the cover 20. The bottom of the main body 64 of each sliding latch 60 includes a protrusion 70 that is designed to engage the detents 42a, 42b in the cover 20. The detents 42a, 42b and the protrusion 70 hold the sliding latch 60 in the open or closed position, as desired. When the sliding latch 60 is in the open position, the protrusion 70 is located in the first detent 42a.

[0022] FIG. 6 also illustrates the lip 108 extending from the top edge 106 of the fitting base 100. The lip 108 extends outward away from the sidewalls 104 of the fitting base 100. When the sliding latch 60 is in the open position, the locking feet 72 are spaced from the lip 108. As a result, there is sufficient clearance between the lip 108 of the fitting base 100 and the inwardly extending members 76 of the locking feet 72 of the sliding latch 60 to remove the cover 20 from the fitting base 100.

[0023] FIGS. 7-9 illustrate the sliding latch 60 in a closed position. In the closed position, the sliding latch 60 is pushed inward toward the center of the cover 20 such that it is positioned within the recessed area 40. As illustrated in FIG. 9, once the sliding latch 60 has been slid into the closed position, the protrusion 70 is located in the second detent 42b and the inwardly extending members 76 of the locking feet 72 are positioned under the lip 108 to secure the cover 20 to the fitting base 100.

[0024] FIGS. 10-15 illustrate one of the sliding latches 60 according to an example useful for understanding the present invention installed on an alternative latch receiving area, such as a raised area 80. FIGS. 10-12 illustrate a top of the cover and the sliding latch 60 positioned on the raised area 80 in an extended position.

[0025] As illustrated in FIG. 12, the raised area 80 also includes detents 82a, 82b. As discussed above, the bottom of the main body 64 of each sliding latch 60 includes a protrusion 70. The protrusion 70 is designed to engage the detents 82a, 82b in the raised area 80. The detents 82a, 82b and the protrusion 70 hold the sliding latch 60 in the open or closed position, as desired. When the sliding latch 60 is in the open position, the protrusion 70 is located in the first detent 82a.

[0026] FIGS. 13-15 illustrate the sliding latch 60 positioned on the raised area 80 in a closed position. In the

closed position, the sliding latch 60 is pushed inward toward the center of the cover 20. As illustrated in FIG. 15, once the sliding latch 60 has been slid into the closed position, the protrusion 70 is located in the second detent 82b and the inwardly extending members 76 of the locking feet 72 are positioned under the lip 108 to secure the cover 20 to the fitting base 100.

[0027] FIGS. 16-18 illustrate alternative embodiments of the cover of the present invention installed over various fittings 200, 300, and 400 in a cable routing system.

[0028] FIG. 16 illustrates an alternative embodiment of the cover of the present invention designed to fit over a four-way cross fitting base 200 with narrow exits. The cover 220 is also designed with two identical cover halves 222. Each cover half 222 includes three sliding latches 260 for securing the cover 220 to the fitting base 200, as described above.

[0029] FIG. 17 illustrates an alternative embodiment of the cover of the present invention designed to fit over a tee fitting base 300 with a narrow exit. The cover 320 for the tee fitting base 300 includes four sliding latches 360 with one sliding latch 360 positioned near each corner of the cover 320.

[0030] FIG. 18 illustrates an alternative embodiment of the cover of the present invention designed to fit over a horizontal 45 degree fitting base 400. The cover 420 for the horizontal 45 degree fitting base 400 includes three sliding latches 460 positioned near the ends of the cover 420.

[0031] The cover with the sliding latches of the present invention is easy to install, secure and remove, as desired, over a variety of fitting bases in a cable routing system.

[0032] Furthermore, while the particular preferred embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the teaching of the invention. The matter set forth in the foregoing description and accompanying drawings is offered by way of illustration only and not as limitation. The actual scope of the invention is intended to be defined in the following claims when viewed in their proper perspective based on the prior art.

Claims

1. A cover (20) for a cable fitting base, the cover (20) comprising:

a top (24);
a bottom (30) opposite the top (24); and
a sliding latch (60), the sliding latch (60) having a first end (62), a main body (64) and a second end (66), whereby the sliding latch (60) releasably secures the cover (20) to the cable fitting base; **characterised in that**;
the top (24) of the cover (20) has a recessed latch receiving area (40) and the sliding latch (60) is positioned within, and maintained by, the recessed latch receiving area (40).

2. The cover (20) of claim 1, wherein the cover (20) includes a crowned profile for increasing the rigidity of the cover (20).

3. The cover (20) of claim 1, wherein the cover (20) includes two identical half members (22).

4. The cover of claim 1, wherein the bottom (30) further comprising a channel (36) for receiving an edge of the cable fitting base.

5. The cover (20) of claim 1, wherein the sliding latch (60) having locking feet (72) extending from the second end (66), whereby the locking feet (72) secure the cover (20) to the cable fitting base, and preferably wherein the locking feet (72) include a downwardly extending member (28), an inwardly extending member (76) and an outer rib (78).

6. A cable management system comprising:

a fitting base (100) having a bottom (102) and sidewalls (104) with a top edge (106); and
a cover (20) as claimed in claim 1, whereby the sliding latch (60) releasably secures the cover (20) to the fitting base (100).

7. The cable management system of claim 6, wherein the cover (20) includes a crowned profile for increasing the rigidity of the cover (20).

8. The cable management system of claim 6, wherein the cover (20) includes two identical half members (22).

9. The cable management system of claim 6, wherein the bottom (30) of the cover (20) further comprising a channel (36) for receiving the top edge (106) of the fitting base (100).

10. The cover (20) of claim 1 or the cable management system of claim 6, wherein the sliding latch (60) includes a finger tab (68) extending from the first end (62).

11. The cover (20) of claim 1 or the cable management system of claim 6, wherein the sliding latch (60) includes a protrusion (70) and the latch receiving area (40) includes a plurality of detents (42a, 42b) for receiving the protrusion (70) to maintain a position of the sliding latch (60).

12. The cable management system of claim 6, wherein the sliding latch (60) includes locking feet (72) ex-

tending from the second end (66).

13. The cable management system of claim 12, wherein the locking feet (72) include a downwardly extending member (74), an inwardly extending member (76) and an outer rib (78) and the fitting base (100) includes a lip (108) extending from the top edge (106), whereby the inwardly extending members (76) of the locking feet (72) are positioned below the lip (108) to the secure the cover (20) to the fitting base (100).

Patentansprüche

1. Abdeckung (20) für eine Kabelverbinderbasis, wobei die Abdeckung (20) Folgendes umfasst:

eine Oberseite (24),
eine der Oberseite (24) gegenüberliegende Unterseite (30) und
einen Gleitriegel (60), wobei der Gleitriegel (60) ein erstes Ende (62), einen Hauptkörper (64) und ein zweites Ende (66) aufweist, wodurch der Gleitriegel (60) die Abdeckung (20) auf lösbare Weise an der Kabelverbinderbasis sichert, **dadurch gekennzeichnet, dass**
die Oberseite (24) der Abdeckung (20) einen ausgenommenen Riegelaufnahmebereich (40) aufweist und der Gleitriegel (60) in dem ausgenommenen Riegelaufnahmebereich (40) positioniert und durch diesen gehalten ist.

2. Abdeckung (20) nach Anspruch 1, wobei die Abdeckung (20) ein balliges Profil aufweist, um die Festigkeit der Abdeckung (20) zu erhöhen.

3. Abdeckung (20) nach Anspruch 1, wobei die Abdeckung (20) zwei identische Halbelemente (22) aufweist.

4. Abdeckung nach Anspruch 1, wobei die Bodenseite (30) ferner einen Kanal (36) zur Aufnahme eines Rands der Kabelverbinderbasis umfasst.

5. Abdeckung (20) nach Anspruch 1, wobei der Gleitriegel (60) Verriegelungsfüße (72) aufweist, die sich von dem zweiten Ende (66) erstrecken, wodurch die Verriegelungsfüße (72) die Abdeckung (20) an der Kabelverbinderbasis sichern, und wobei die Verriegelungsfüße (72) vorzugsweise ein sich nach unten erstreckendes Element (28), ein sich nach innen erstreckendes Element (76) und eine Außenrippe (78) umfassen.

6. Kabelführungssystem, umfassend:

eine Verbinderbasis (100), die eine Unterseite (102) und Seitenwände (104) mit einem oberen Rand (106) aufweist, und
eine Abdeckung (20) nach Anspruch 1, wobei der Gleitriegel (60) die Abdeckung (20) auf lösbare Weise an der Verbinderbasis (100) sichert.

7. Kabelführungssystem nach Anspruch 6, wobei die Abdeckung (20) ein balliges Profil aufweist, um die Festigkeit der Abdeckung (20) zu erhöhen.

8. Kabelführungssystem nach Anspruch 6, wobei die Abdeckung (20) zwei identische Halbelemente (22) umfasst.

9. Kabelführungssystem nach Anspruch 6, wobei die Bodenseite (30) der Abdeckung (20) ferner einen Kanal (36) zur Aufnahme des oberen Rands (106) der Verbinderbasis (100) umfasst.

10. Abdeckung (20) nach Anspruch 1 oder Kabelführungssystem nach Anspruch 6, wobei der Gleitriegel (60) eine Fingerlasche (68) umfasst, die sich von dem ersten Ende (62) erstreckt.

11. Abdeckung (20) nach Anspruch 1 oder Kabelführungssystem nach Anspruch 6, wobei der Gleitriegel (60) einen Vorsprung (70) umfasst und der Riegelaufnahmebereich (40) eine Vielzahl von Rasten (42a, 42b) zum Aufnehmen des Vorsprungs (70) umfasst, um eine Position des Gleitriegels (60) aufrechtzuerhalten.

12. Kabelführungssystem nach Anspruch 6, wobei der Gleitriegel (60) Verriegelungsfüße (72) umfasst, die sich von dem zweiten Ende (66) erstrecken.

13. Kabelführungssystem nach Anspruch 12, wobei die Verriegelungsfüße (72) ein sich nach unten erstreckendes Element (74), ein sich nach innen erstreckendes Element (76) und eine Außenrippe (78) umfassen und die Verbinderbasis (100) eine Lippe (108) umfasst, die sich von der oberen Kante (106) erstreckt, wodurch die sich nach innen erstreckenden Elemente (76) der Verriegelungsfüße (72) unter der Lippe (108) positioniert sind, um die Abdeckung (20) an der Verbinderbasis (100) zu sichern.

Revendications

1. Protection (20) pour une base de fixation de câble, la protection (20) comprenant :

une partie supérieure (24) ;
une partie inférieure (30) opposée à la partie supérieure (24) ; et
un verrou coulissant (60), le verrou coulissant (60) ayant une première extrémité (62), un corps principal (64) et une seconde extrémité (66), le

verrou coulissant (60) fixant de manière amovible la protection (20) à la base de fixation de câble ; **caractérisé en ce que**
la partie supérieure (24) de la protection (20) a une zone de réception de verrou en retrait (40) et le verrou coulissant (60) est positionné à l'intérieur de la zone de réception de verrou en retrait (40) et maintenu par celle-ci.

2. Protection (20) selon la revendication 1, la protection (20) comprenant un profil couronné pour augmenter la rigidité de la protection (20).

3. Protection (20) selon la revendication 1, la protection (20) comprenant deux demi-éléments identiques (22) .

4. Protection selon la revendication 1, la partie inférieure (30) comprenant en outre un canal (36) pour recevoir un bord de la base de fixation de câble.

5. Protection (20) selon la revendication 1, le verrou coulissant (60) ayant des pieds de verrouillage (72) s'étendant à partir de la seconde extrémité (66), les pieds de verrouillage (72) fixant la protection (20) à la base de fixation de câble, et de préférence les pieds de verrouillage (72) comprenant un élément s'étendant vers le bas (28), un élément s'étendant vers l'intérieur (76) et une nervure externe (78).

6. Système de gestion de câbles, comprenant :

une base de fixation (100) ayant une partie inférieure (102) et des parois latérales (104) avec un bord supérieur (106) ; et
une protection (20) selon la revendication 1, le verrou coulissant (60) fixant de manière amovible la protection (20) à la base de fixation (100).

7. Système de gestion de câbles selon la revendication 6, la protection (20) comprenant un profilé couronné pour augmenter la rigidité de la protection (20).

8. Système de gestion de câbles selon la revendication 6, la protection (20) comprenant deux demi-éléments identiques (22).

9. Système de gestion de câbles selon la revendication 6, la partie inférieure (30) de la protection (20) comprenant en outre un canal (36) pour recevoir le bord supérieur (106) de la base de fixation (100).

10. Protection (20) selon la revendication 1 ou système de gestion de câbles selon la revendication 6, le verrou coulissant (60) comprenant une languette de doigt (68) s'étendant à partir de la première extrémité (62).

11. Protection (20) selon la revendication 1 ou système de gestion de câbles selon la revendication 6, le verrou coulissant (60) comprenant une saillie (70) et la zone de réception de verrou (40) comprenant une pluralité de crans (42a, 42b) destinés à recevoir la saillie (70) pour maintenir une position du verrou coulissant (60).

12. Système de gestion de câbles selon la revendication 6, le verrou coulissant (60) comprenant des pieds de verrouillage (72) s'étendant à partir de la seconde extrémité (66).

13. Système de gestion de câbles selon la revendication 12, les pieds de verrouillage (72) comprenant un élément s'étendant vers le bas (74), un élément s'étendant vers l'intérieur (76) et une nervure externe (78) et la base de fixation (100) comprenant une lèvre (108) s'étendant depuis le bord supérieur (106), moyennant quoi les éléments s'étendant vers l'intérieur (76) des pieds de verrouillage (72) sont positionnés sous la lèvre (108) pour fixer la protection (20) à la base de fixation (100) .

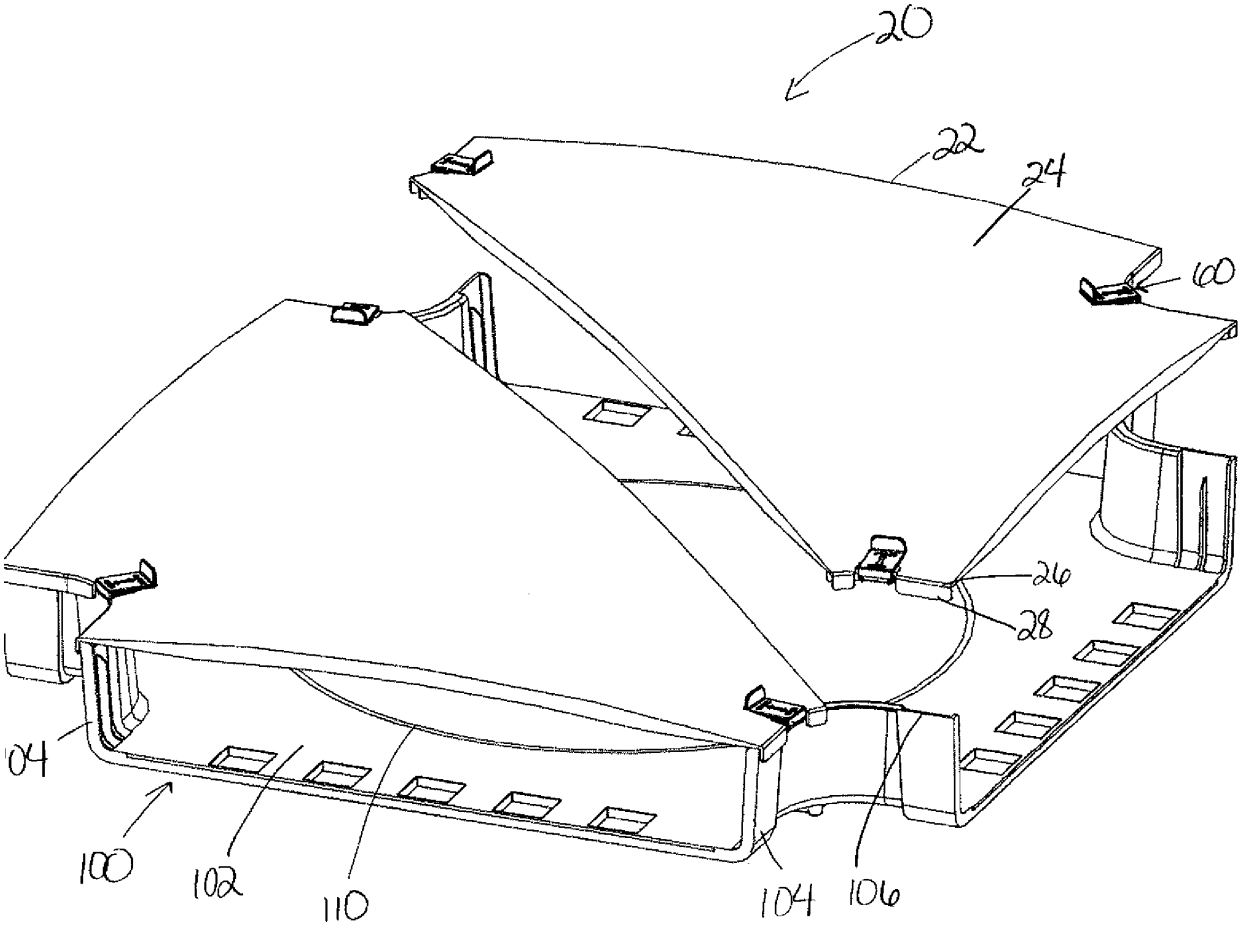

FIG. 1

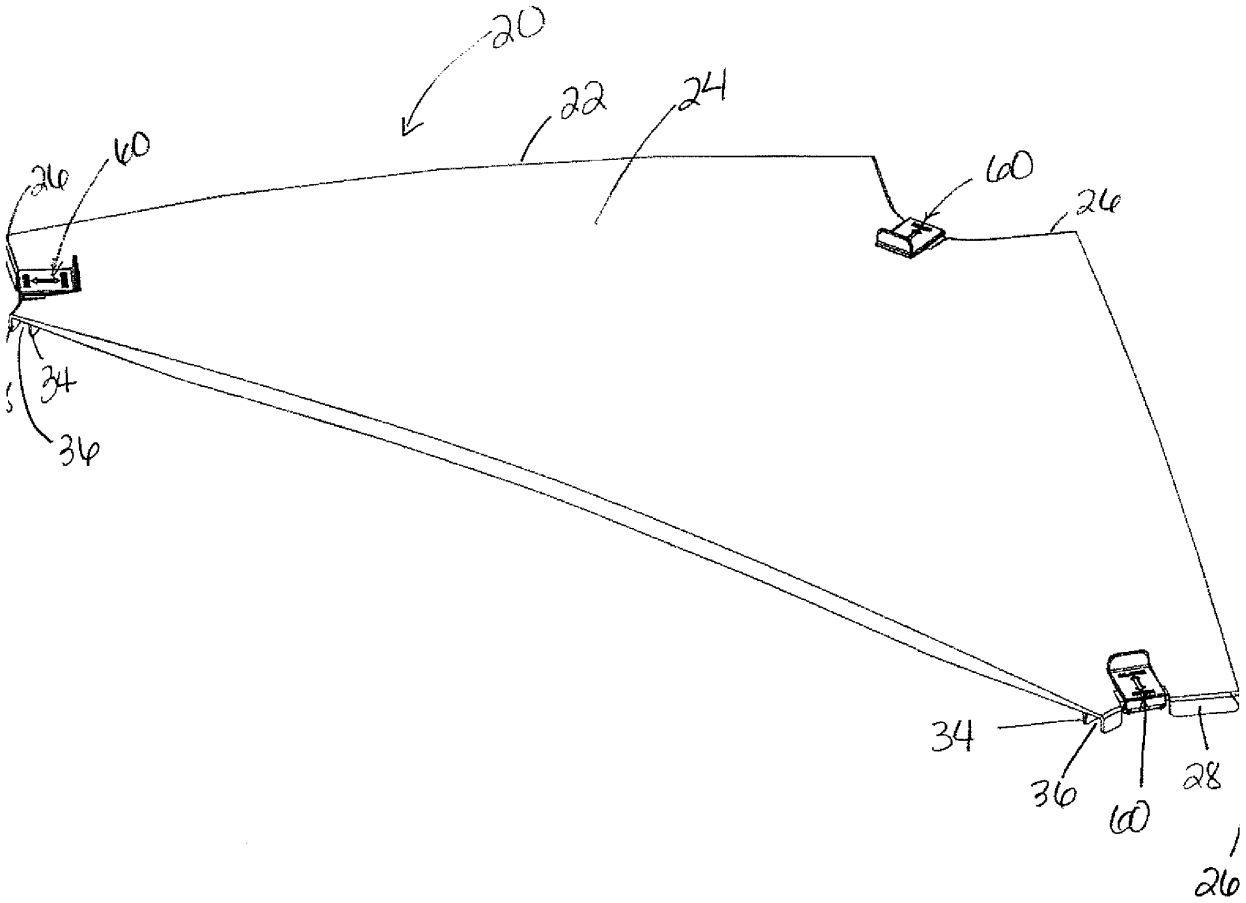

FIG. 2

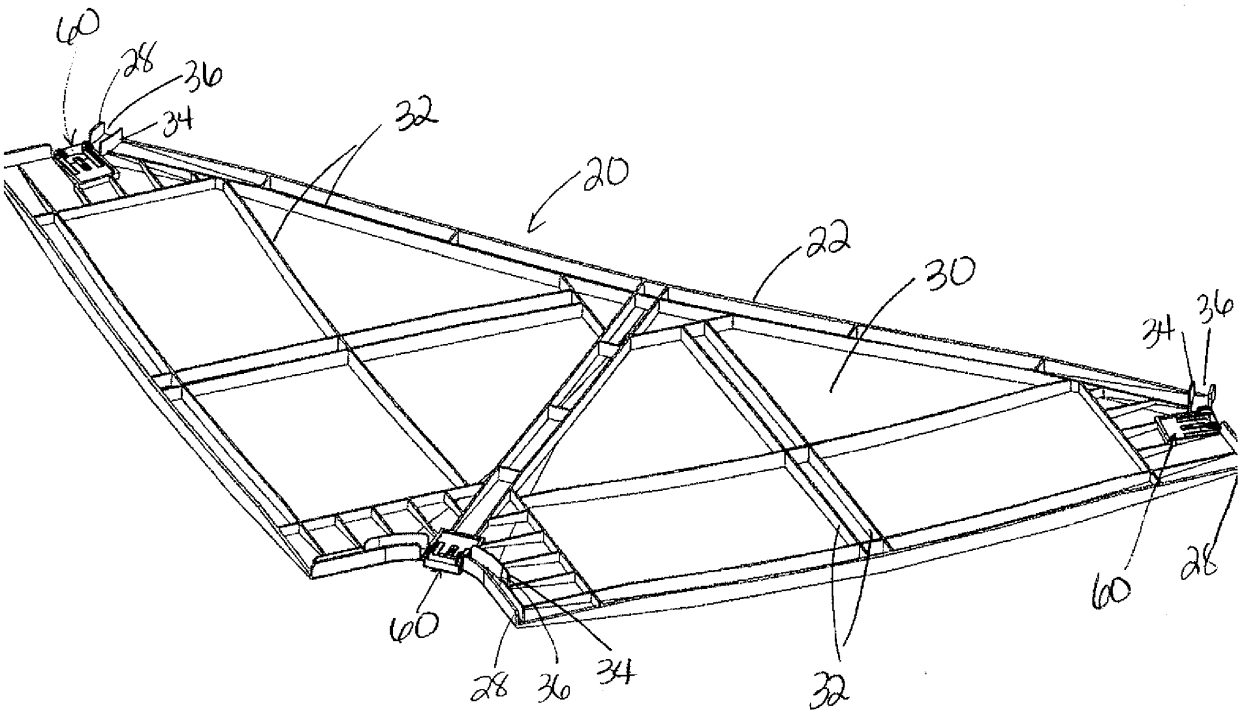

FIG. 3

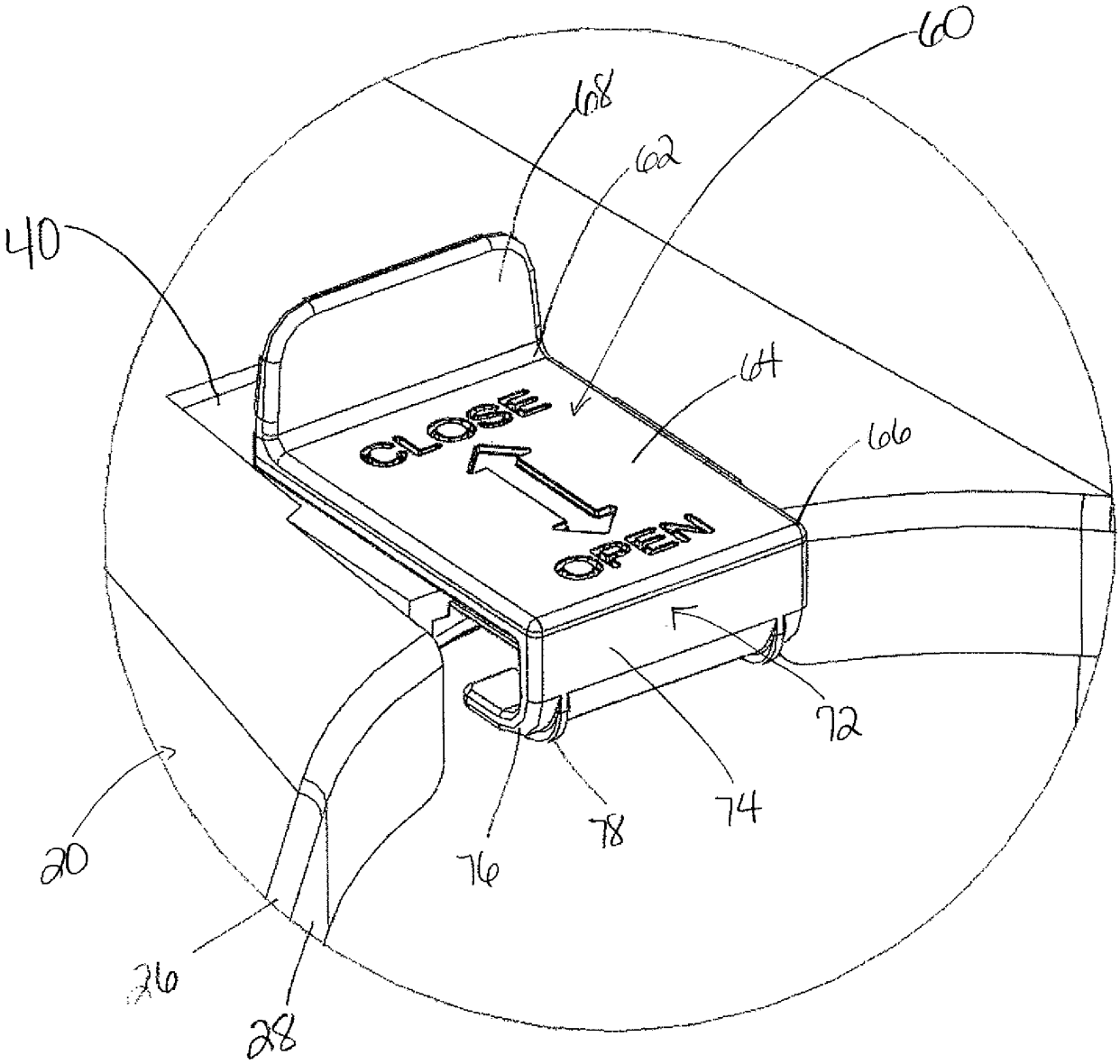

FIG. 4

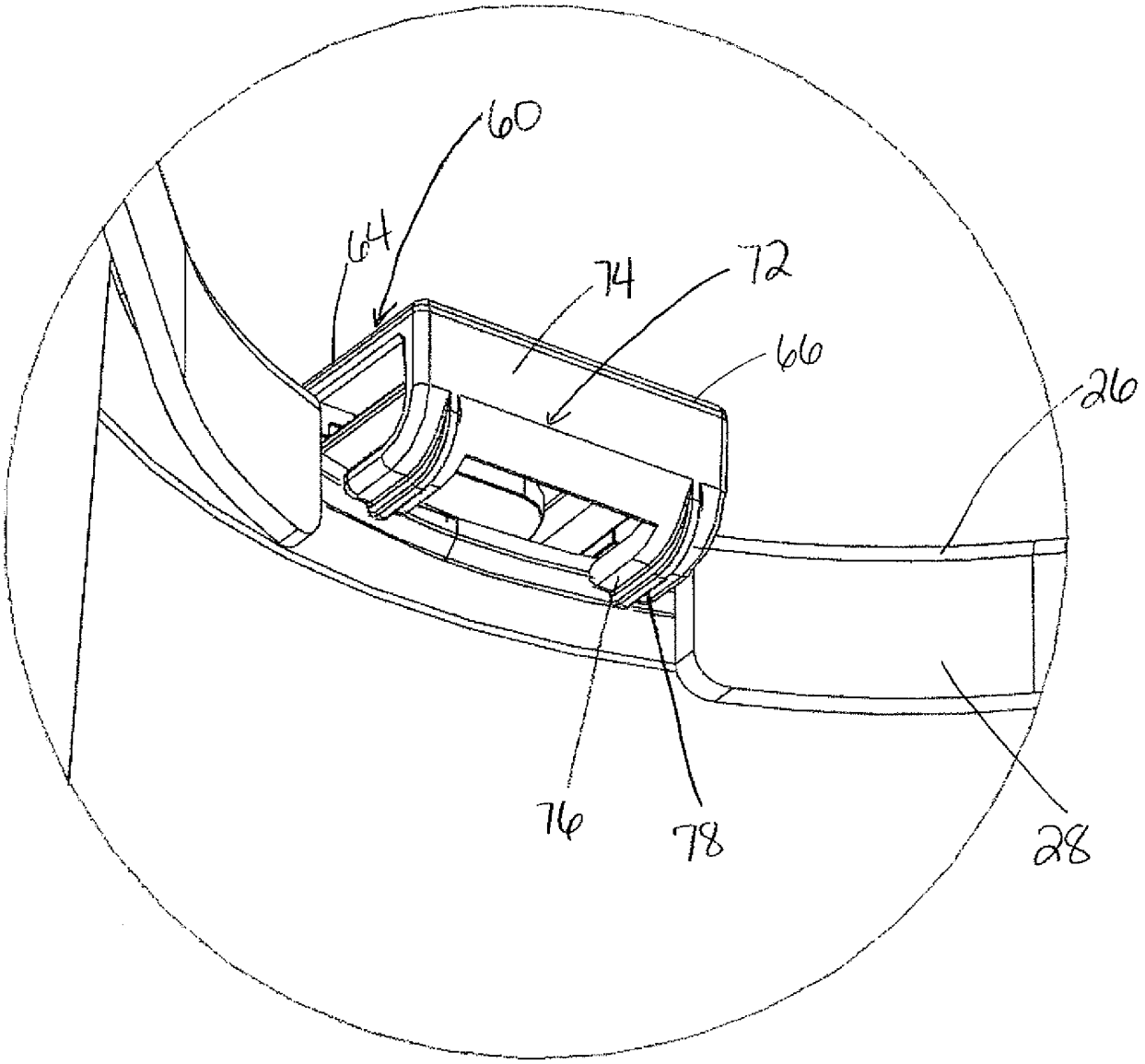

FIG. 5

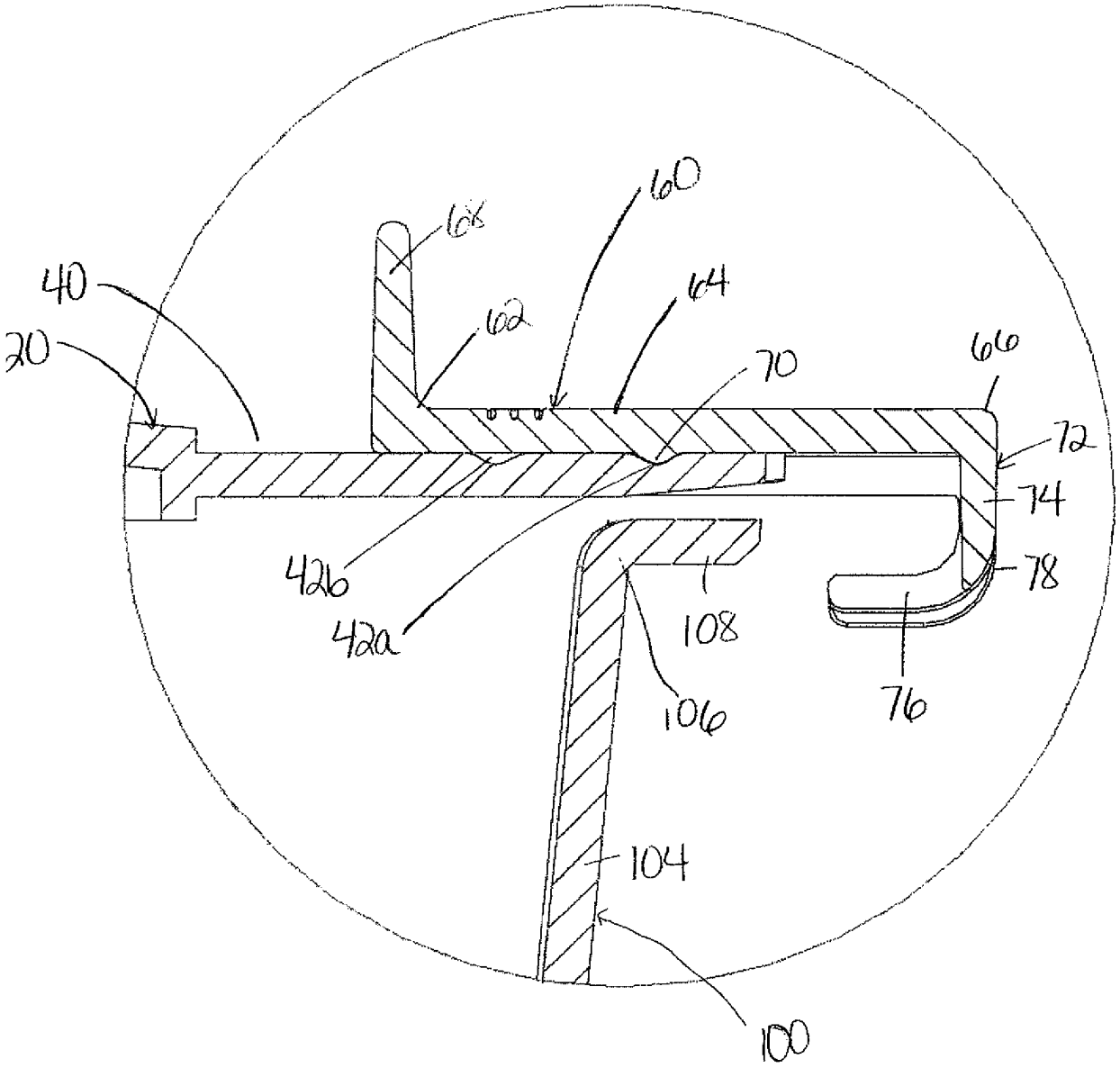

FIG. 6

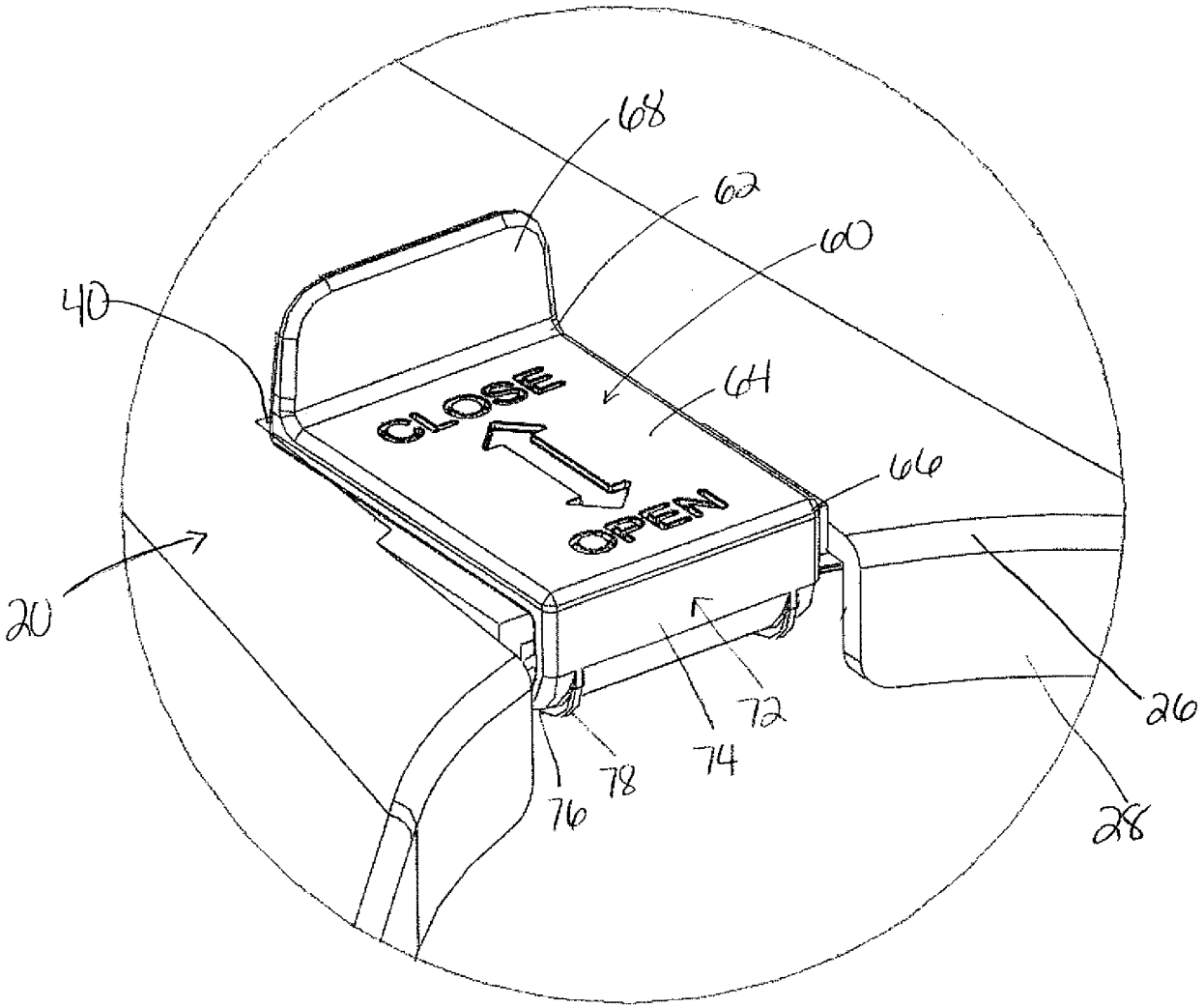

FIG. 7

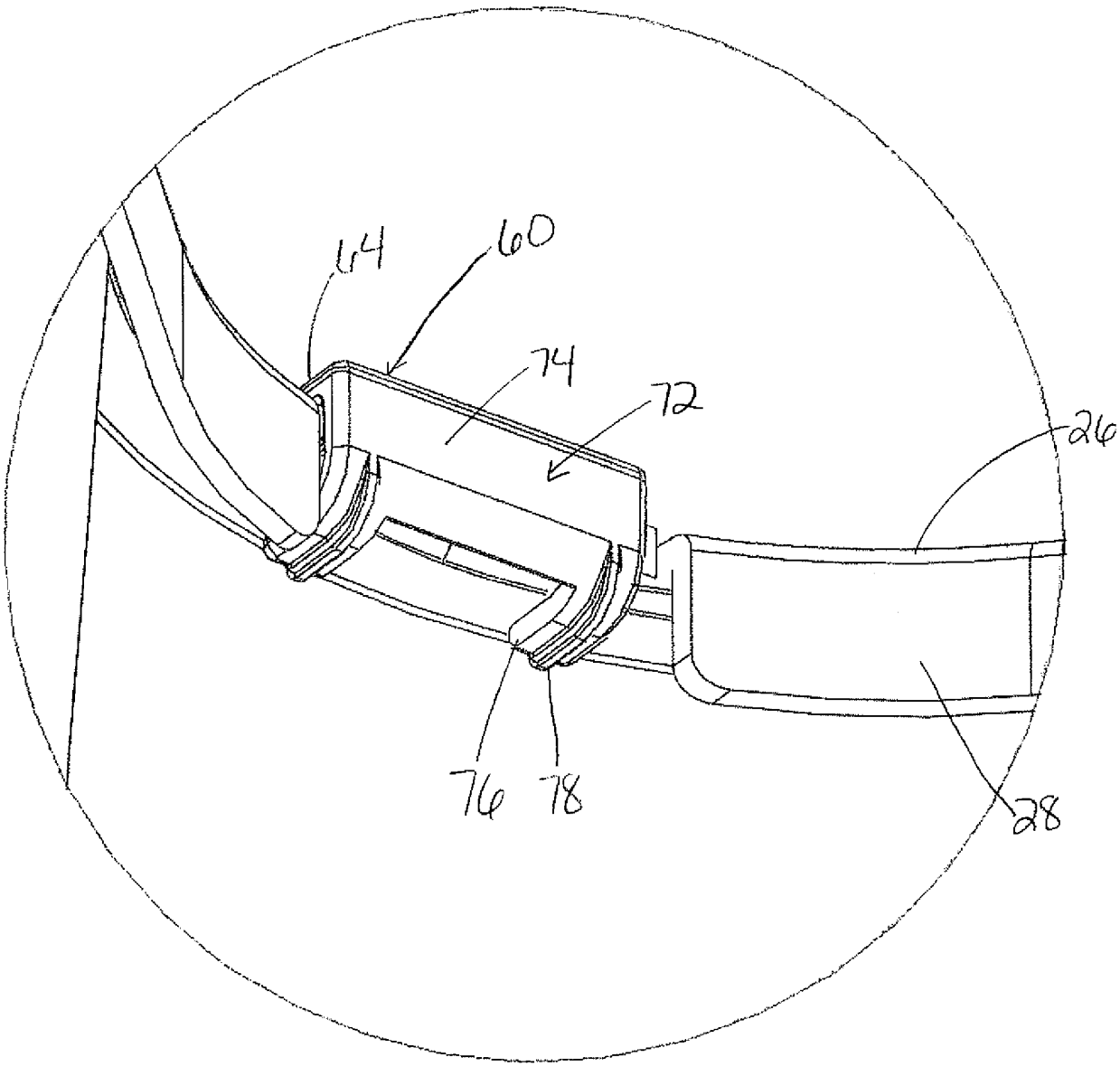

FIG. 8

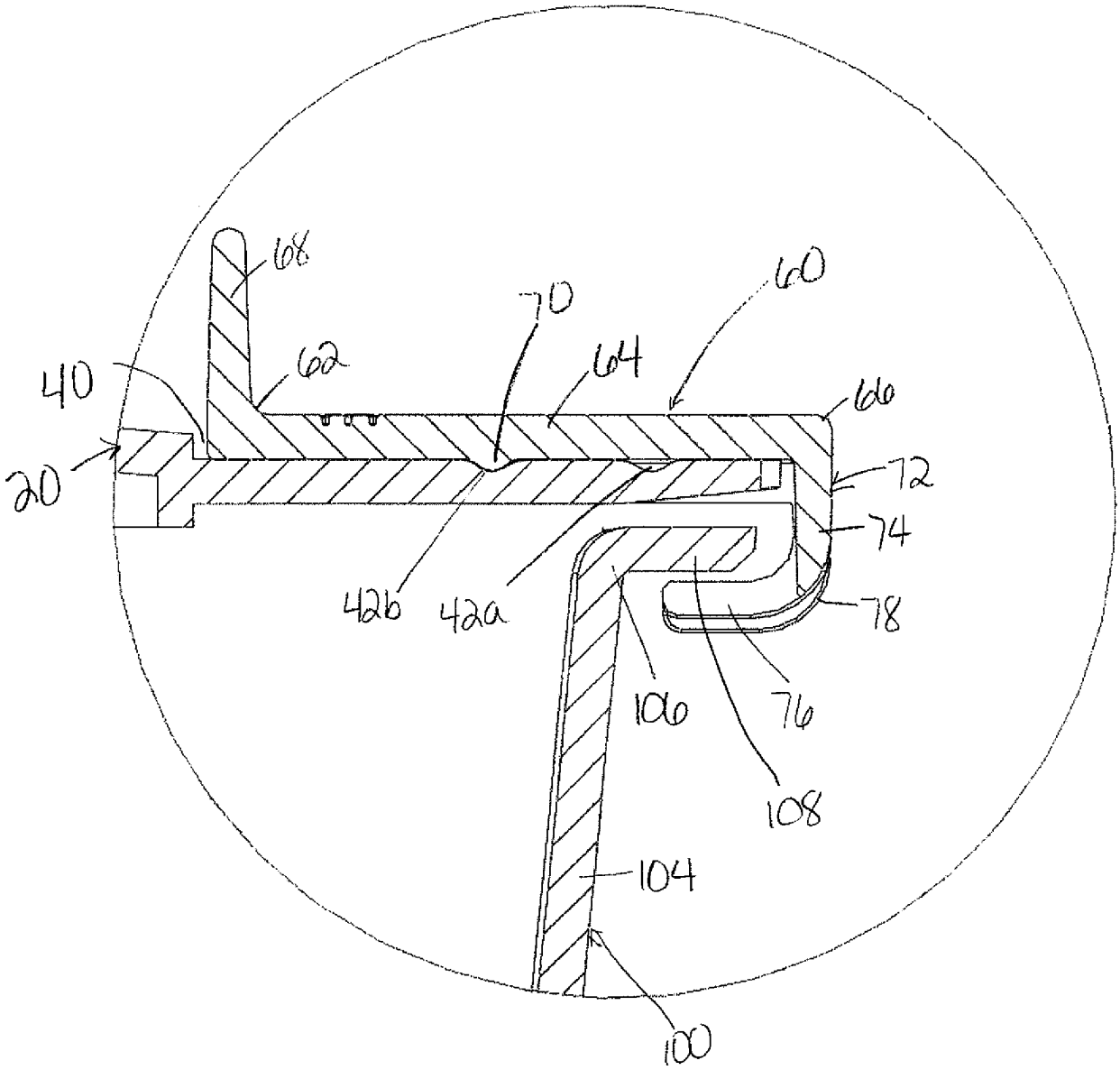

FIG. 9

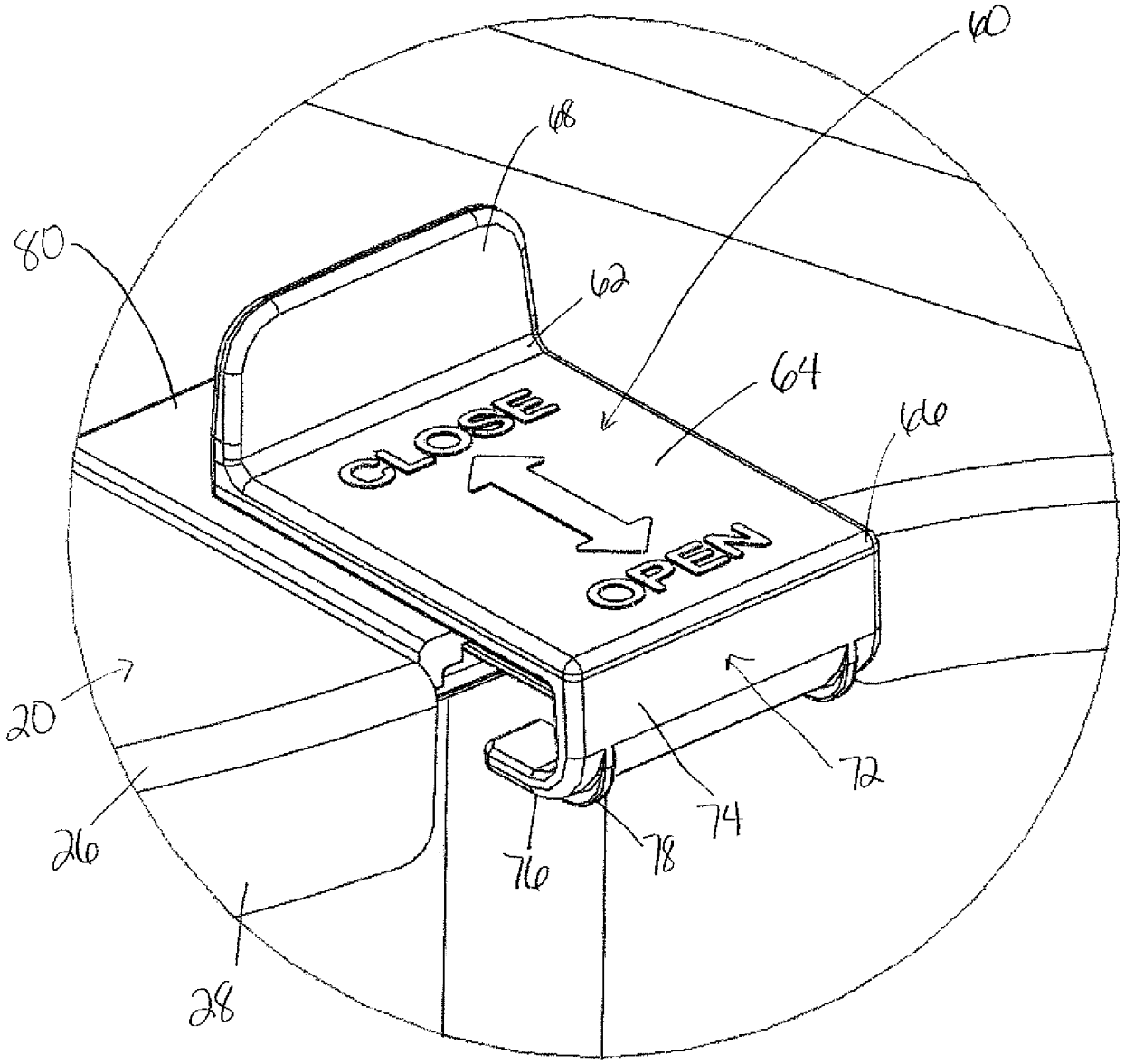

FIG. 10

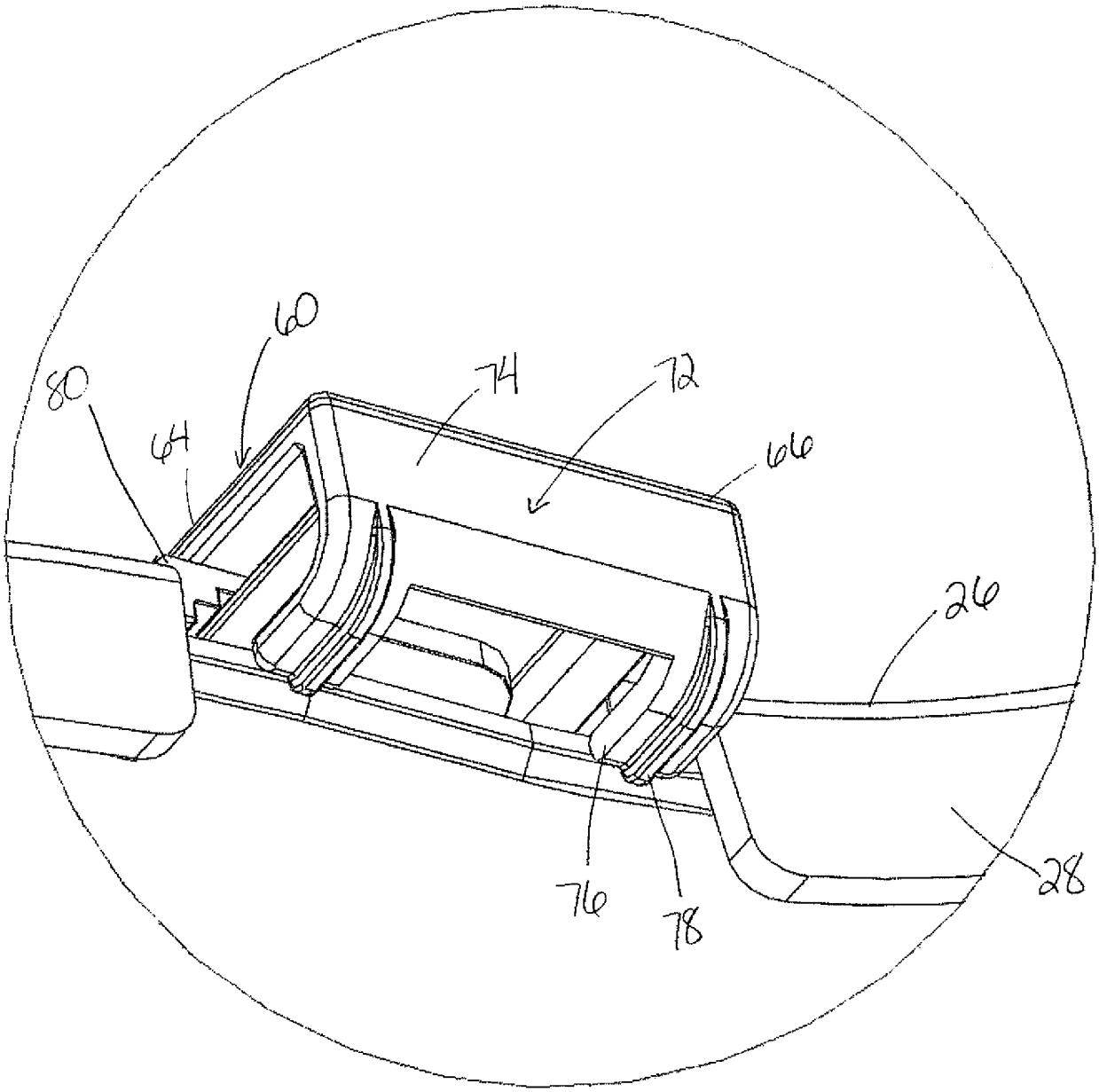

FIG. 11

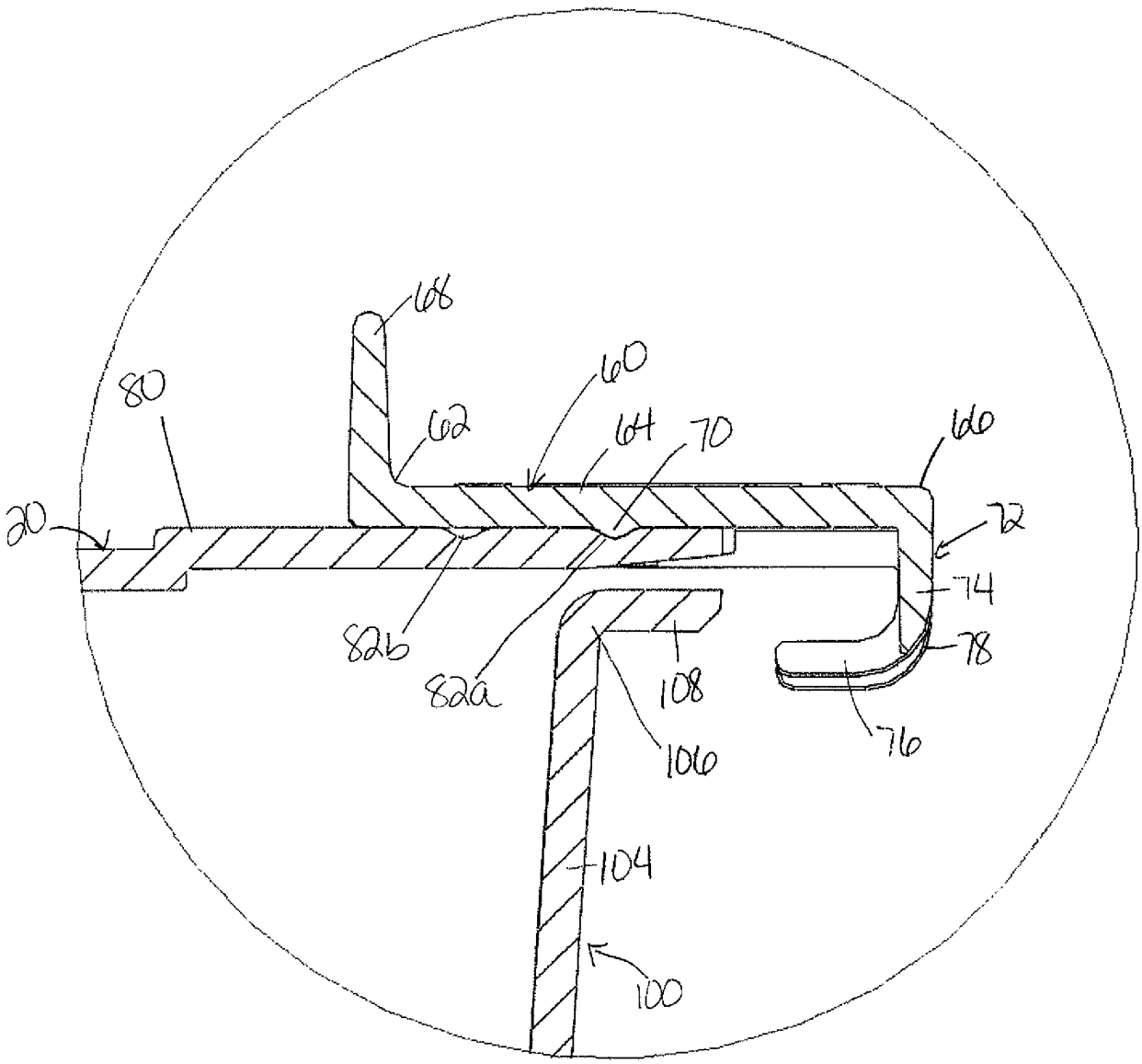

FIG. 12

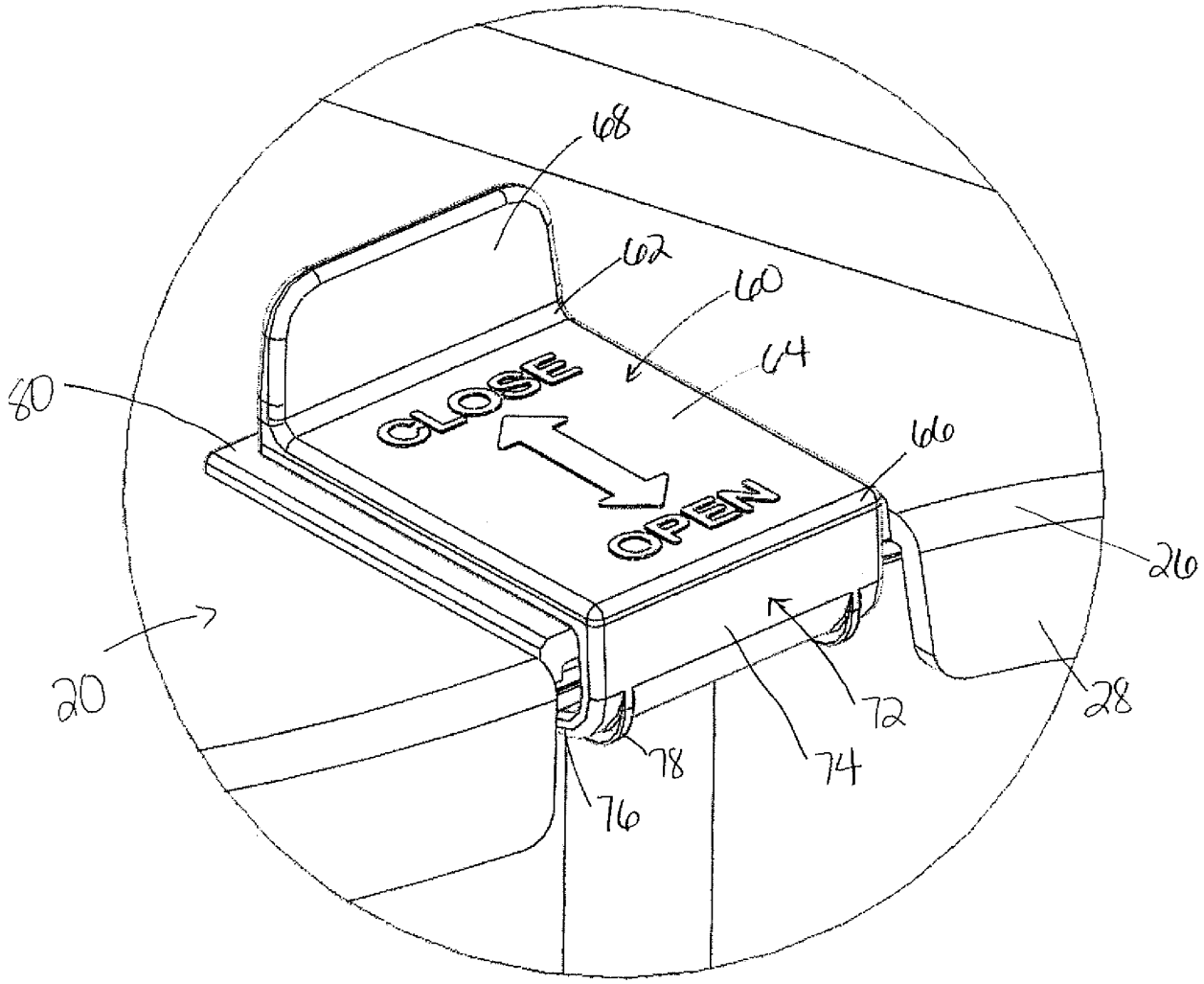

FIG. 13

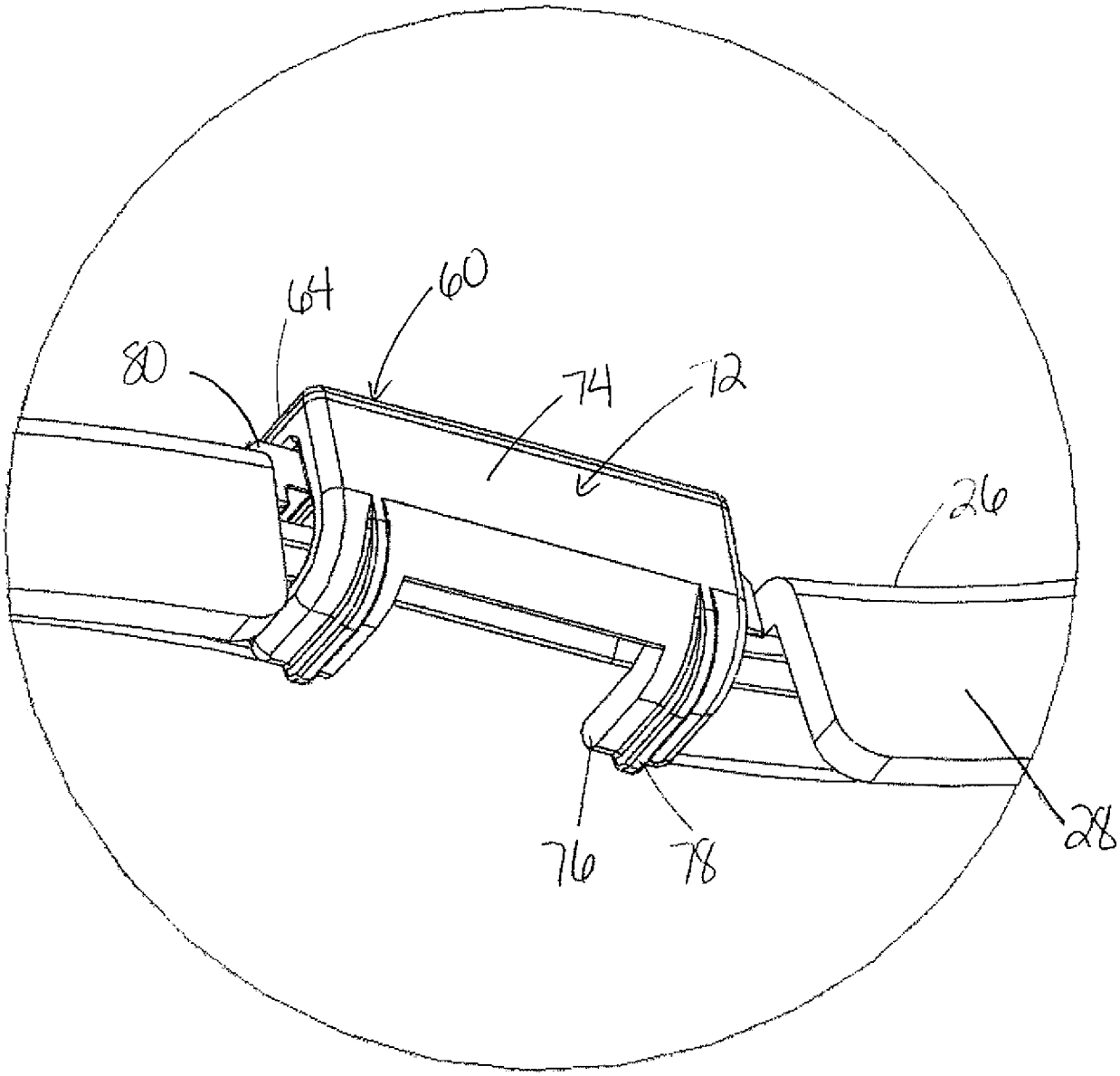

FIG. 14

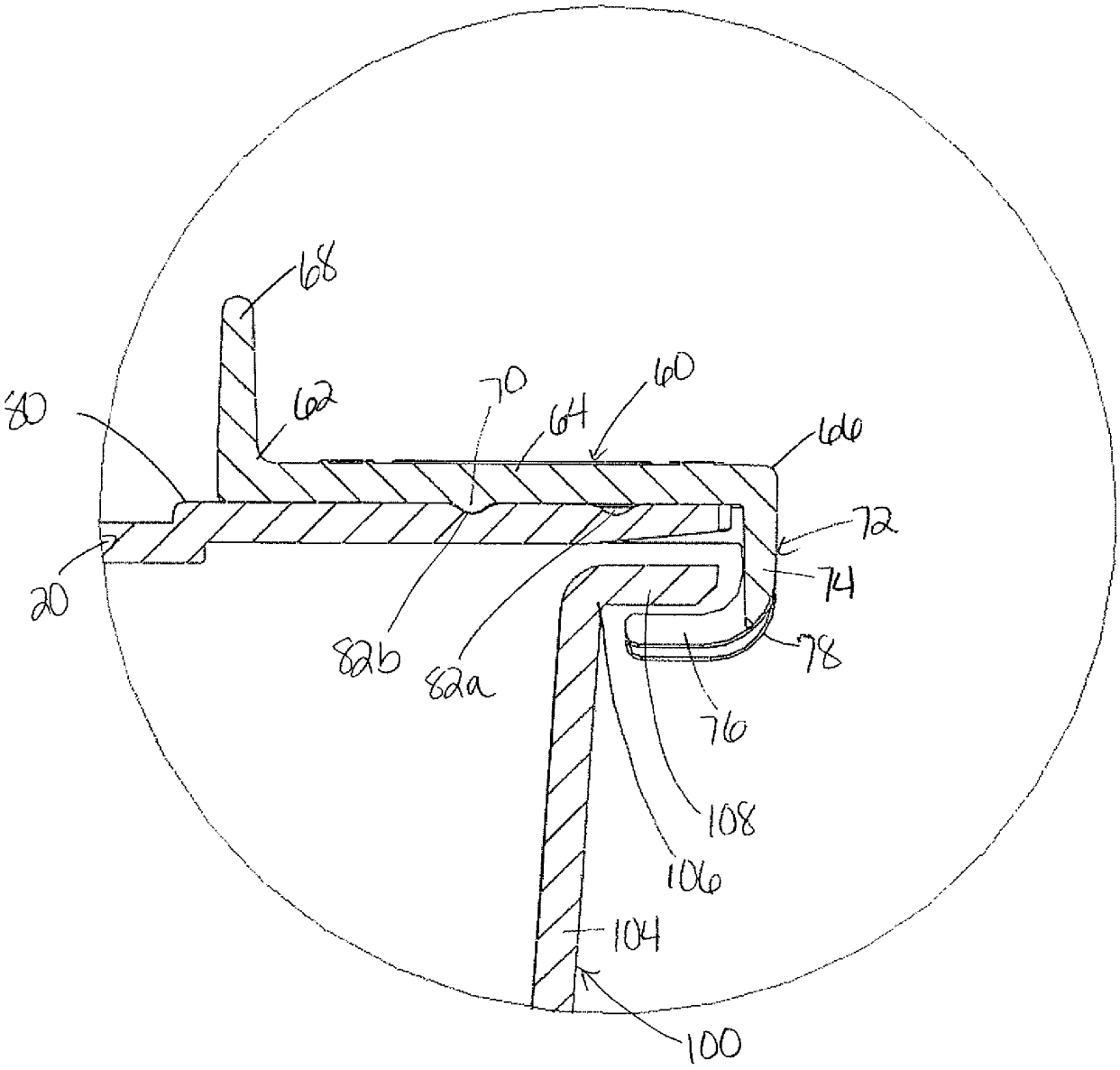

FIG. 15

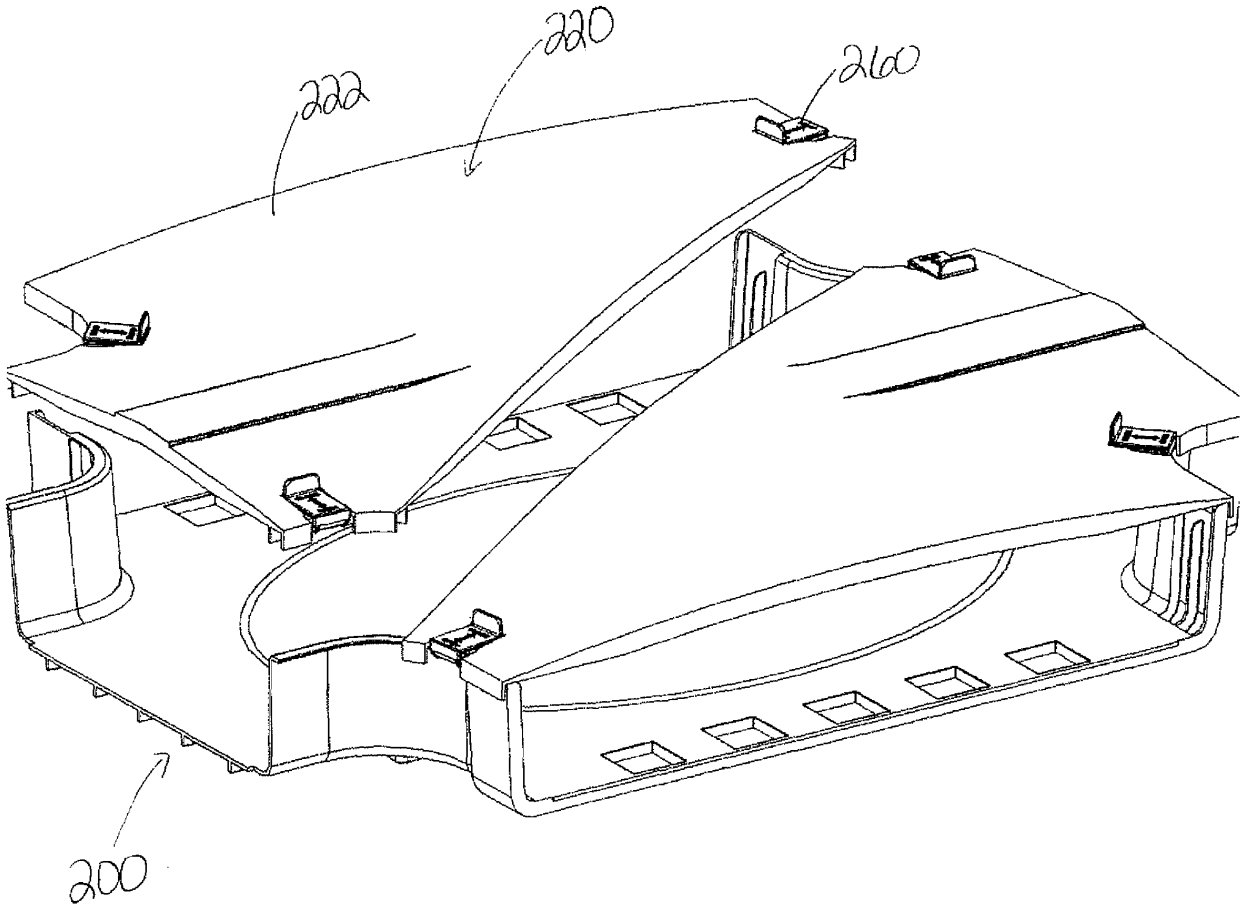

FIG. 16

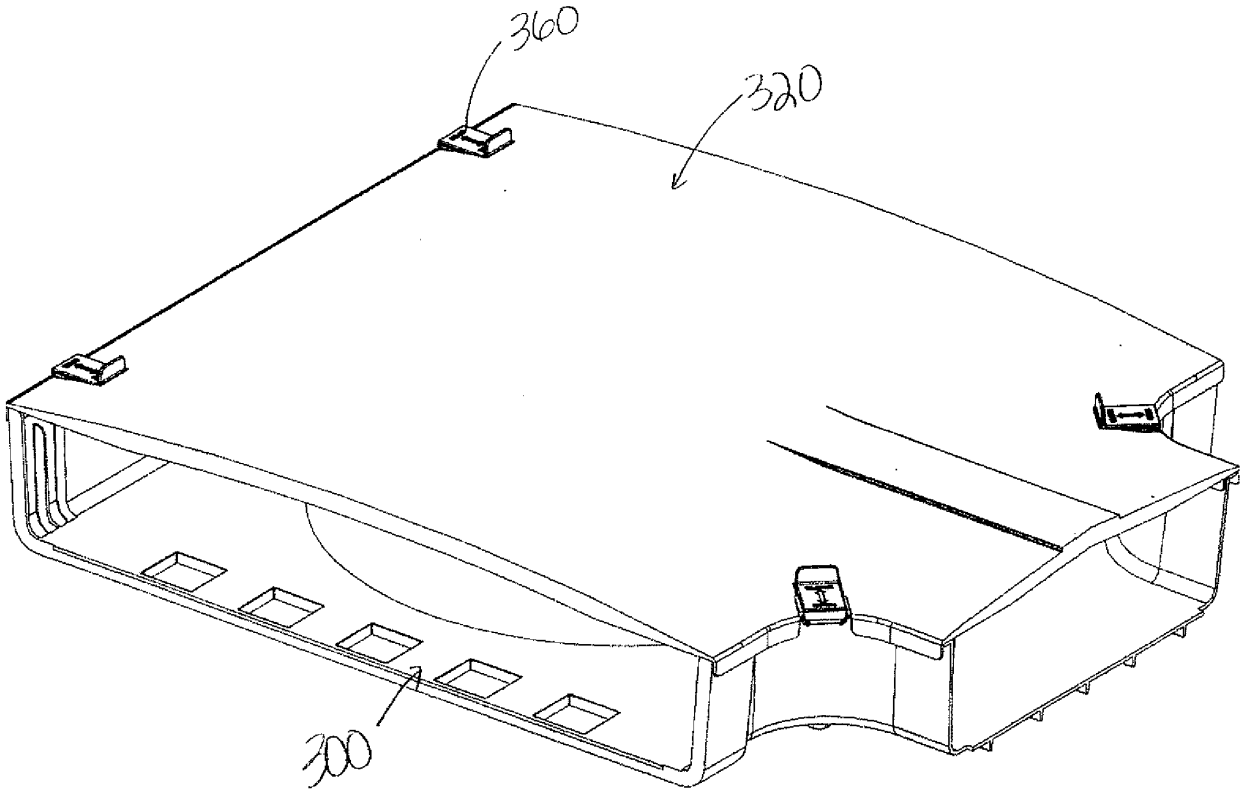

FIG. 17

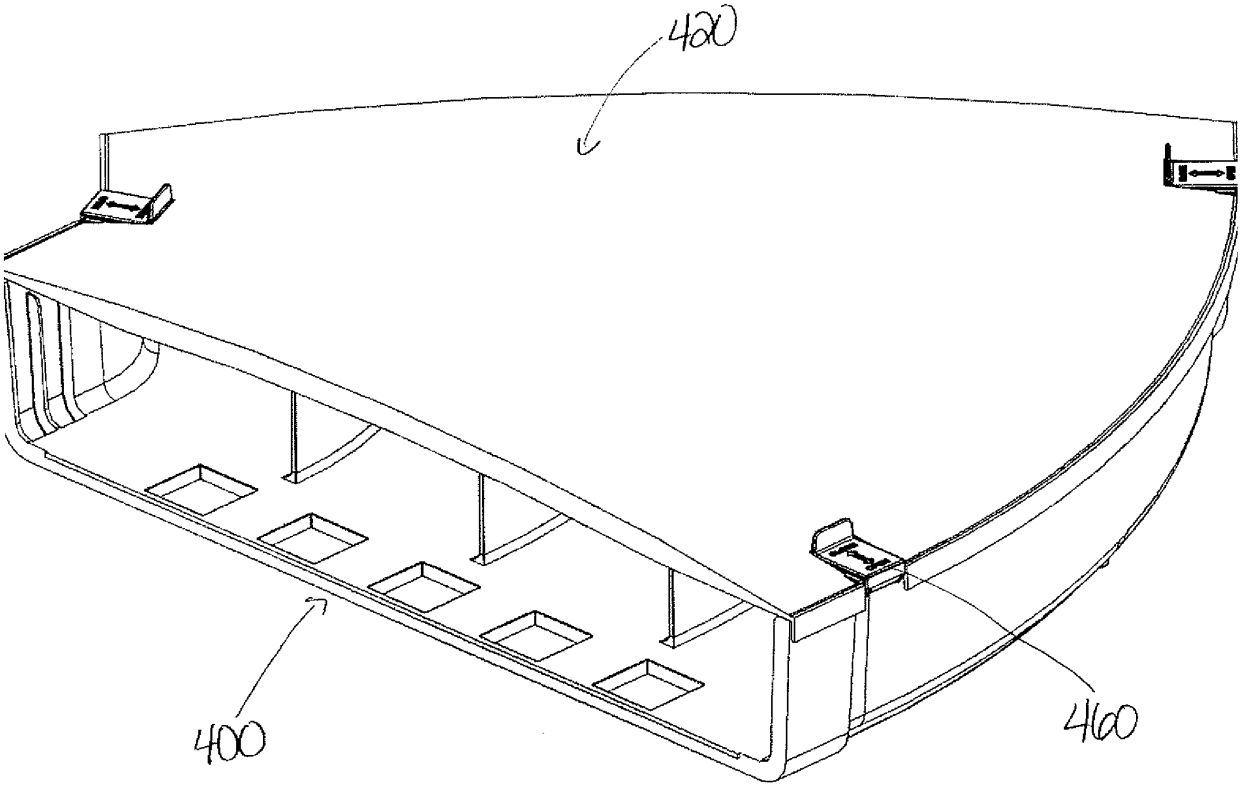

FIG. 18

REFERENCES CITED IN THE DESCRIPTION

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